

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A method of fabricating ~~an energy storage device~~ a thin-film battery, comprising:

providing a substrate;

forming an electrode first film on the substrate;

forming an electrolyte second film electrolyte on the first film, wherein the electrolyte second film blocks the flow of electrons while permitting the flow of ions, and wherein forming the electrolyte second film includes:

depositing electrolyte material using a deposition source; and

supplying energized particles from a second source such that the particles provide energy to the electrolyte material to deposit the electrolyte material

into a desired film structure; and

forming an electrode third film on the second film.

2. (Original) The method of claim 1, wherein supplying energized particles includes supplying ions having an energy of greater than about 5 eV.

3. (Original) The method of claim 1, wherein supplying energized particles includes supplying ions having an energy of less than about 3000 eV.

4. (Original) The method of claim 1, wherein supplying energized particles includes supplying ions having an energy in the range of about 5 eV to about 500 eV.

5. (Original) The method of claim 1, wherein supplying energized particles includes supplying ions having an energy in the range of about 5 eV to about 250 eV.

6. (Original) The method of claim 1, wherein supplying energized particles includes supplying ions having an energy in the range of about 10 eV to about 200 eV.

1 7. (Original) The method of claim 1, wherein supplying energized particles
2 includes supplying ions having an energy in the range of about 0 eV to about 40 eV.

1 8. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness of less than about 5000 Angstroms.

1 9. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness of less than about 2500 Angstroms.

1 10. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness of less than about 1000 Angstroms.

1 11. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness of less than about 500 Angstroms.

1 12. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness of less than about 250 Angstroms.

1 13. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness of less than about 100 Angstroms.

1 14. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness in a range of about 10 Angstroms to
3 about 200 Angstroms.

1 15. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness in a range of about 10 Angstroms to
3 about 100 Angstroms.

1 16. (Original) The method of claim 1, wherein depositing electrolyte material
2 includes depositing Li_3PO_4 electrolyte material.

1 17. (Original) The method of claim 1, wherein supplying energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 Li_3PO_4 electrolyte material.

1 18. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes providing a nitrogen-enriched atmosphere in which the Li_3PO_4 electrolyte material
3 is deposited.

1 19. (Original) The method of claim 1, wherein forming the electrolyte film includes
2 forming the electrolyte film to a thickness sufficient to insulate the electrode first film from
3 the electrode second film and to allow ion transport between the electrode first film and the
4 electrode second film.

1 20. (Original) The method of claim 19, wherein forming the electrode first film
2 includes depositing at least one of a metal and an intercalation material.

1 21. (Original) The method of claim 20, wherein forming the electrode third film
2 includes depositing at least one of a metal and an intercalation material.

1 22. (Original) The method of claim 1, wherein forming the electrolyte second film
2 includes forming the electrolyte film to a thickness in a range of about 1 nanometer to about
3 250 nanometers.

1 23.-36. (Cancelled)

1 37. (Currently amended) An apparatus comprising:
2 means for providing a substrate;
3 means for forming an electrode first film on the substrate;
4 means for forming an electrolyte second film on the first film, wherein the
5 electrolyte second film blocks the flow of electrons while permitting the flow of ions, and
6 wherein the means for forming the electrolyte second film includes:
7 means for depositing electrolyte material using a deposition source; and
8 means for supplying energized particles from a second source such that
9 the particles provide energy to the electrolyte material to deposit the
10 electrolyte material into a desired film structure; and
11 means for forming an electrode third film on the second film.

1 38. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 5 eV to about 50
3 eV.

1 39. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 5 eV to about 40
3 eV.

1 40. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 5 eV to about 30
3 eV.

1 41. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 5 eV to about 20
3 eV.

1 42. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 500
3 eV.

1 43. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 400
3 eV.

1 44. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 300
3 eV.

1 45. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 250
3 eV.

1 46. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 200
3 eV.

1 47. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 150
3 eV.

1 48. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 100
3 eV.

1 49. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 50
3 eV.

1 50. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 40
3 eV.

1 51. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 30
3 eV.

1 52. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 10 eV to about 20
3 eV.

1 53. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 300
3 eV.

1 54. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 250
3 eV.

1 55. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 200
3 eV.

1 56. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 150
3 eV.

1 57. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 100
3 eV.

1 58. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 50
3 eV.

1 59. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 40
3 eV.

1 60. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20eV to about 30
3 eV.

1 61. (Previously presented) The method of claim 1, wherein the supplying energized
2 particles includes supplying ions having an energy in the range of about 20 eV.

1 62. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than 5000
3 Angstroms.

1 63. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than 4000
3 Angstroms.

1 64. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than 3000
3 Angstroms.

1 65. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than 2000
3 Angstroms.

1 66. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than 1000
3 Angstroms.

1 67. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than 500 Angstroms.

1 68. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 400
3 Angstroms.

1 69. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 300
3 Angstroms.

1 70. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 250
3 Angstroms.

1 71. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 200
3 Angstroms.

1 72. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 150
3 Angstroms.

1 73. (Currently amended) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of ~~less than~~ in a range of
3 about 10 Angstroms and about 400 50 Angstroms.

1 74. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 75
3 Angstroms.

1 75. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 50
3 Angstroms.

1 76. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 30
3 Angstroms.

1 77. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of less than about 20
3 Angstroms.

1 78. (Previously presented) The method of claim 1, wherein the forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of about 20 Angstroms.

1 79. (Previously presented) The method of claim 1, wherein the, forming the electrolyte
2 second film includes forming the electrolyte film to a thickness of about 10 Angstroms.

1 80. (Previously presented) The method of claim 1, wherein the forming of the first
2 film includes depositing a vanadium oxide, the forming of the second film includes
3 depositing lithium phosphorus oxynitride, and the forming of the third film includes
4 depositing a lithium intercalation material.

1 81. (Previously presented) The method of claim 1, wherein the forming of the electrode
2 first film includes depositing an intercalation material.

1 82. (Previously presented) The method of claim 81, wherein the forming of the electrode
2 third film includes depositing a metal.

1 83. (Previously presented) The method of claim 1, wherein the forming of the electrode
2 first film includes depositing a metal.

1 84. (Previously presented) The method of claim 83, wherein the forming of the electrode
2 third film includes depositing an intercalation material.

1 85. (New) The method of claim 1, wherein the forming the electrolyte second film
2 includes forming the electrolyte film to a thickness in a range of about 20 Angstroms and
3 about 150 Angstroms.

1 86. (New) The method of claim 1, wherein the forming the electrolyte second film
2 includes forming the electrolyte film to a thickness in a range of about 20 Angstroms and
3 about 200 Angstroms.

1 87. (New) The apparatus of claim 37, wherein the electrolyte second film is lithium
2 phosphorus oxynitride.

1 88. (New) The apparatus of claim 87, wherein the electrolyte second film is deposited to
2 a thickness in a range of about 10 Angstroms and about 200 Angstroms.

1 89. (New) The apparatus of claim 87, wherein the electrolyte second film is deposited to
2 a thickness in a range of about 10 Angstroms and about 200 Angstroms.

1 90. (New) The apparatus of claim 87, wherein the electrolyte second film is deposited to
2 a thickness in a range of about 10 Angstroms and about 200 Angstroms.

1 91. (New) The method of claim 1, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 92. (New) The method of claim 2, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 93. (New) The method of claim 3, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 94. (New) The method of claim 4, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 95. (New) The method of claim 5, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 96. (New) The method of claim 6, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 97. (New) The method of claim 7, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 98. (New) The method of claim 8, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 99. (New) The method of claim 9, wherein the supplying of energized particles includes
2 supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 100. (New) The method of claim 10, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 Li₃PO₄ electrolyte material to form lithium phosphorus oxynitride.

1 101. (New) The method of claim 11, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 102. (New) The method of claim 12, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 103. (New) The method of claim 13, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 104. (New) The method of claim 14, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 105. (New) The method of claim 15, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 106. (New) The method of claim 16, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 107. (New) The method of claim 17, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 108. (New) The method of claim 18, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 109. (New) The method of claim 19, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 110. (New) The method of claim 20, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 111. (New) The method of claim 21, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 112. (New) The method of claim 22, wherein the supplying of energized particles
2 includes supplying energized nitrogen particles, and reacting the nitrogen particles with the
3 electrolyte material to form lithium phosphorus oxynitride.

1 113. (New) A method comprising:
2 providing a substrate;
3 depositing an electrode first film on the substrate;
4 depositing an electrolyte second film on the first film, wherein the electrolyte second
5 film blocks the flow of electrons while permitting the flow of ions, and wherein the
6 electrolyte second film includes LiPON electrolyte material deposited using an electrolyte
7 deposition source and energized nitrogen particles from a second source such that the
8 energized nitrogen particles provide energy to the electrolyte material during its deposition
9 to form the electrolyte material into a desired film structure; and
10 depositing an electrode third film on the second film.

1 114. (New) The method of claim 113, wherein the electrolyte second film is deposited to
2 a thickness in a range of about 10 Angstroms and about 200 Angstroms.

1 115. (New) The method of claim 113, wherein the electrolyte second film is deposited to
2 a thickness in a range of about 10 Angstroms and about 200 Angstroms.

1 116. (New) The method of claim 113, wherein the electrolyte second film is deposited to
2 a thickness in a range of about 10 Angstroms and about 200 Angstroms.

Conclusion

The "In the Claims" section was indicated as non-compliant for marking some of the claims as (Previously cancelled), or (Cancelled). These claims have been now marked as (Canceled), as requested.

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (952) 278-3501 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to deposit Account No. 502931.

Respectfully Submitted

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Date

27 October 2004

By

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CERTIFICATE UNDER 37 CFR § 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelop addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 27 day of October 2004.

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